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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,269	10/02/2003	Jari Makinen	059864.01114	3464

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SQUIRE, SANDERS & DEMPSEY L.L.P.
8000 TOWERS CRESCENT DRIVE
14TH FLOOR
VIENNA, VA 22182-6212

EXAMINER	
HAN, QI	

ART UNIT	PAPER NUMBER
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10/22/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/676,269	MAKINEN, JARI	
	Examiner	Art Unit	
	QI HAN	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 June 2008 and 28 July 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17,19-21,39 and 40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17,19-21,39 and 40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Response to Amendment

3. This communication is responsive to the applicant's amendment filed on and RCE filed on 07/28/2008. The applicant(s) amended claims 1, 10-11, 17 and 39, and added claim 40 (see the amendment: pages 2-7).

The examiner withdrew the rejection of claims 1-16 and 39 under 35 USC 112 1st, because the applicant amended the corresponding claim(s), (not because of the arguments in Remarks). However, it is noted that the claimed limitation of claim 17 (also applied to 19-21) is not in compliance with the requirement of 35 USC 112 1st, so that the rejection of claims 17 and 19-21 is sustained (see below).

Response to Arguments

4. Applicant's arguments filed on 06/20/2008 with respect to the claim rejection under 35 USC 102 and/or 103, have been fully considered but are moot in view of the new ground(s) of rejection (see below), since the amended/added independent claims introduce new issue and/or change the scope of the claims.

It is noted that the previous cited references are still applicable to the newly amended and/or added claims for the prior art rejection with newly combined teachings. It is also noted that the response to the applicant's arguments (page 11-23) based on the newly amended/added claims is directed to the new ground rejection (see below).

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claim 40 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claim 40, it recites "a computer program embodied on a computer-readable medium …". Since it is unclear that what the claimed "computer-readable medium" really is or specifically refers to in the specification (also see new matter rejection under 112 1st below), considering the instant application being related to process signal in a communication network (see Summary: page 5), the claimed "computer-readable medium" may be broadly directed to carrier wave or communication medium, which is non-statutory. It is noted that computer readable medium referring to communication media, carrier wave, transport mechanism,

transmission media, wired media, wireless media, signals, does not fall within any one of four statuary categories under 35 U.S.C. 101. Further, the claim referring to communication media such as a carrier wave, as whole, does not produce a useful, concrete, and tangible result in a practical application, because it is nothing more than claiming a signal itself. Therefore, the claim, as whole, is directed to non-statutory subject matter.

6. To expedite a complete examination of the instant application the claims rejection under 35 U.S.C 101 (nonstatutory) above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of invention.

Claim Rejections - 35 USC § 112

7. Claims 17, 19-21 and 40 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 17 and 19-21, the limitation of "**a processor** configured to calculate values…" in the claim(s) introduces new subject matter, which is not specifically disclosed by the original specification.

Regarding claim 40, the limitation of "a computer program embodied on a computer-readable medium configured to control a processor to perform…" in the newly added claim introduces new subject matter, because the applicant failed to provide the reference(s) where the

claimed limitation is supported by the specification and nowhere in the original specification can be found to specifically disclose the limitation.

Claim Rejections - 35 USC § 102

8. Claims 1-6, 12, 16-17, 19-21 and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by SU et al. (US 2001/0023395 A1) hereinafter referenced as SU.

As per **claim 1**, SU discloses 'speech encoder adaptively applying pitch preprocessing with warping of target signal' (title), comprising:

"at least one stage to encode a frame using at least one of a plurality of codec modes, wherein an encoded frame formed by each of said codec modes comprises a plurality of parameters" (abstract and Figs 8-10; and p(paragraph)28 and p75 with Table 1),

"wherein said at least one stage comprise:

"first, calculating values for said plurality of parameters (four measures)" (Fig2. and p75, p79 and p92-p98, wherein 'four measures' with the corresponding equations are read on the claimed limitation);

"second, selecting one group from a plurality of groups of said codec modes using said calculated values of said parameters, wherein each of said groups comprises at least one of said codec mode modes and comprises a common parameter characteristic", (p75 and Figs 8-10, wherein conditional and/or branch processes (such as blocks 810, 830, 1010 and 1020) are interpreted as groups, 'selected bit rate (selecting one group comprising at least one of codec modes) = 6.65 kb/sec (a common parameter characteristic); p111, 'LTP mode=0 (common parameter, for electing one group)

…referred to as pp (using said estimated values)' that as 4.55 and 5.8 kpbs (codec mode modes) encoding bit rates (common parameters)', which can also be broadly read on the claim; it is noted that since the limitation "common parameter characteristic" lacks more specific/detailed description in the specification, it can be reasonably read on 'bit rate', 'LTP mode' as stated above, any of 'classification' results (such as voice/unvoiced, or mode) by using the 'four measures (parameters)' (p92-p100), 'data rate' restricted by channel' such as 'full rate' and 'half rate' (p30-p31), or the combination thereof); and

"third encoding the frame with one of the codec modes from the selected group in dependence on said common parameter characteristic" (Figs 8-10, blocks '1030' to '1090' show encoding a frame; p24 and p561, 'encoder processing circuit adaptively selects a particular encoding scheme (group and/or mode) based upon (in dependence on) various parameters and speech signal characteristics (including common parameter characteristic such as voice/unvoiced, or mode classification result)'; also see p75 and Table 1; p111).

As per **claim 2** (depending on claim 1), SU further discloses "a plurality of said stages", (Figs 8-10, as stated above; in addition, since the claim limitation is very broad, 'VAD 235' for active/inactive voice classification (stage) and block 279 for voice/unvoiced classification (stage) in Fig. 2 and p89-p99, and 'multi-stage VQ' in p204-p206, can also be broadly read on the claim).

As per **claim 3** (depending on claim 1), SU further discloses "the parameters comprise **one or** more of: a voice activity detection (VAD) flag, a long term prediction (LTP) filtering flag parameter, an immitance spectral pair (ISP) parameter, a pitch delay parameter, an algebraic

codebook (CB) parameter, a gain parameter and a high-band energy parameter" (p75 (table 1) and p88-p93).

As per **claim 4** (depending on claim 1), SU further discloses "the parameter characteristic is a bit size of the parameter" (p75 (table 1) and p205-p206).

As per **claim 5** (depending on claim 1), SU further discloses "the frame is a speech frame" (p75).

As per **claim 6** (depending on claim 1), SU further discloses "the selected group consists of (comprises) one or more of said codec modes" (Figs. 8-10).

As per **claim 12** (depending on claim 1), SU further discloses "each of the plurality of codec modes defines a bit rate for encoding the frame" (p75).

As per **claim 16** (depending on claim 1), SU further discloses "the plurality of codec modes are codec modes of an adaptive multi rate codec" (abstract and p14).

As per **claims 17 and 19-21**, they recite an apparatus. As best understood in view of the claim rejection under 35 USC 112 1st (see above), the rejection is based on the same reasons described for claim 1 and 3-5 respectively, because the method claims and apparatus claims are related as apparatus and method of using same, with each claimed element's function corresponding to the claimed method step, wherein 'a single DSP' disclosed by SU (p38) is read on the claimed 'a processor'.

As per **claims 39**, it recites an apparatus. The rejection is based on the same reason described for claims 1 and 3, because the claim recites the same or similar limitations as claims 1 and 3.

As per **claims 40**, it recites a computer program. As best understood in view of the claim rejection under 35 USC 112 1st (see above), the rejection is based on the same reason described for claim 1, because the claim recites the same or similar limitations as claim 1.

Claim Rejections - 35 USC § 103

9. Claims 7-9, 11 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over SU in view of CHANG et al. (US 6226607) hereinafter referenced as CHANG.

As per **claim 7** (depending on claim 1), SU does not **expressly** disclose "the **selecting** said one codec mode group is in **dependence on determined parameters** determined from the encoding of the frame". However, the feature is well known in the art as evidenced by CHANG who discloses 'speech coding decision process', and teaches that 'energy (parameter from the encoding of the frame) is a measure of the speech activity of the frame' and if it 'falls below a predefined threshold level', 'the speech coder encodes the frame as background noise' and selects '1/8 rate (one codec mode group)', and that other parameters are used to determine voice/unvoiced speech for different encoding rates (selecting …depending on parameters) (Fig. 4 and col. 5, lines 1-67), as claimed. In addition, CHANG teaches 'conventional speech coder' that 'to encode the silence at eighth rate (selecting one codec mode group), the energy (parameter) of the current frame is measured (determined), quantized and transmitted' (in dependence on the parameters for encoding) (col. 2, lines 12-14), which further supports the rejection. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify SU by providing selecting an encoding process based on the frame parameter(s), such as energy, as taught by CHANG, for the purpose (motivation) of

sufficiently classifying the speech frame so as to use suitable encoding rates (CHANG: col. 5, lines 19-49).

Further, in another view of SU's disclosure, SU teaches 'an encoder processing circuit adaptively selects a particular encoding scheme (interpreted as codec mode or mode group) based on (in dependence on) various parameters (interpreted as determined parameters) including bit rate and speech signal characteristics (interpreted as determined form the encoding of the frame)' (p561), which can also be properly read on the claim, based on broadest reasonable interpretation in light of the specification. This means that the teachings by SU alone can be satisfied for the claim rejection.

As per **claim 8** (depending on claim 7), SU in view of CHANG further discloses "the determined parameters are compared to threshold values" (SU: p93-p99; CHANG: col. 5, lines 5-49).

As per **claim 9** (depending on claim 8), the rejection is based on the same reason described for claims 7-8, because it also reads on the claim.

As per **claim 11** (depending on claim 8), SU in view of CHANG further discloses "wherein the thresholds are stored in a tuning table, the tuning table comprising thresholds for each parameter corresponding to each of the plurality of codec modes" (SU: p93-p111, teaches processing 'voice/unvoiced classification and mode decision' by calculating four measures (parameters) and including using thresholds; CHANG: col. 5, lines 5-67, teaches, classifying frame by using energy with threshold for determining encoding rates (modes) and using 'lookup table (LUT)' to 'encode frames of silence (including storing related data)', therefore, it would have been obvious to one of ordinary skill in the art at time the invention was made to recognize

that storing threshold data in a lookup table would be in the same way (known method and predicable result) for storing other related encoding data such as described by SU), and to combine teachings of SU in view of CHANG by providing storing thresholds in a lookup table for the classification parameters with corresponding codec modes, for the purpose (motivation) of eliminating need to perform certain calculations (CHANG: col.6, lines 65-66), and/or increasing processing speed (because of using simple index for mapping stored data).

As per **claim 13** (depending on claim 1), SU does not **expressly** disclose "said at least one stage being arranged to have a group with a codec mode with a lowest bit rate and another group with remaining codec modes". However, it is noted that CHANG discloses 'energy (parameter from the encoding of the frame) is a measure of the speech activity of the frame' and arranges a groups based on the energy measure including 'the speech coder encodes the frame as background noise' and selects '1/8 rate (a codec mode group with a lowest bit rate', and that other parameters are used to determine voice/unvoiced speech for different encoding rates (codec modes) (Fig. 4 and col. 5, lines 1-67), as claimed. CHANG also teaches 'conventional speech coder' that 'to encode the silence at eighth rate (selecting one codec mode group), the energy (parameter) of the current frame is measured (determined), quantized and transmitted' (in dependence on the parameters for encoding) (col. 2, lines 12-14), which further supports the rejection. In addition, it is noted that SU teaches 'the AMR codec modes' with different rates and the corresponding parameter grouping/arrangement (see p75 (table 1)); 'adaptively selects a particular encoding scheme (group) based upon various parameters' (p561); and arranging stage(s) for encoding schemes/groups, including 'middle bit rate', 'high bit rate', equal, above or below certain bit rate (Figs. 8 and10). For example, SU shows block '1020' branch 'yes' (Fig10)

arranges groups with bit rates below 6.65 kb/sec, which inherently includes codec mode with a lowest bit rate of 4.55 KBPS and another bit rate of 5.8 KBPS (p75). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine teachings of SU and CHANG by providing speech frame classification and mode decision by using different or combined measures for arranging different stages and groups with corresponding encoding modes or bit rates, for the purpose (motivation) of sufficiently classifying the speech frame so as to use suitable encoding rates (CHANG: col. 5, lines 19-49) and/or efficiently using encoder processing resources and/or effectively coding a speech signal at varying bit rates (SU: p11 and p14).

As per **claim 14** (depending on claim 13), the rejection is based on the same reason described for claim 13, because it also reads on the limitation of claim 14, wherein the conditional processes (SU: Figs. 8 and 10; and CHANG: Fig.4) can be interpreted as stages.

As per **claim 15** (depending on claim 15), the rejection is based on the same reason described for claims 13 and 14, because it also reads on the limitation of claim 15, wherein the conditional process 312 (CHANG: Fig.4) can be interpreted as the third stage. In addition, SU discloses the branches of conditional processes that can be properly interpreted as stages (see SU: Figs.8 and 10), which further supports the claim rejection.

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over SU in view of CHANG as applied to claim 8, and further in view of well known prior art (MPEP 2144.03).

As per **claim 10** (depending on claim 8), SU in view of CHANG does not expressly disclose "the threshold values are dependent on a target bit rate". However, an office notice is

taken that a threshold value being dependent on a target bit rate for signal encoding was well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art at time the invention was made to modify SU in view of CHANG by providing related parameter threshold value(s) depending on a target bit rate, because in the multi-rate speech coding system (such as SU's encoder), different target bit rates effect bits size/length of processed/quantized parameter(s) as well as the corresponding threshold value(s).

Conclusion

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Effective January 14, 2005, except correspondence for Maintenance Fee payments, Deposit Account Replenishments (see 1.25(c)(4)), and Licensing and Review (see 37 CFR 5.1(c) and 5.2(c)), please address correspondence to be delivered by other delivery services (Federal Express (Fed Ex), UPS, DHL, Laser, Action, Purolater, etc.) as follows:

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to QI HAN whose telephone number is (571)272-7604. The examiner can normally be reached on M-TH:9:00-17:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571)-272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

QH/qh
October 20, 2008
/Qi Han/
Examiner, Art Unit 2626